Abstract

The invention relates to a method of producing hydroxylammonium salts by catalytic reaction of nitrogen monoxide with hydrogen in a diluted aqueous solution of mineral acid in the presence of platinum catalysts suspended on a support in multiple subsequent reaction stages.

According to the invention, this reaction takes place in a stirred reactor wherein

- a gas inlet and distribution system is provided in the lower part of the stirred reactor,
- a disk agitator is placed immediately above, the hub with bearing surface or support of which comprising angled, concave and tilted agitator blades that rotate their angled or concave sides in the direction of motion, and
- a two-blade blade agitator is provided on the agitator shaft in the upper part of the stirred reactor, its individual leaves being offset like lamellas so that they constantly wet the reactor cap when rotating.

It is an advantage of the method according to the invention that the reduction reaction, due to the effect of the special agitating apparatus, surprisingly proceeds at an extraordinarily high rate, facilitating increased throughput without the need to enlarge the reaction chamber.